

Detection of *Ralstonia Solanacearum* Race 3 Biovar 2 in the United States

In February 2003, the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) confirmed the presence of *Ralstonia solanacearum* race 3 biovar 2 in geraniums in four greenhouses in Illinois, Indiana, Michigan, and Wisconsin. This is the first time this pathogen has been detected in the United States since 1999.

Ralstonia solanacearum race 3 biovar 2 is a bacterial pathogen that causes common wilt in geraniums and infects numerous solanaceous plants (e.g. tomatoes, eggplant, and peppers). It is also a major concern to the potato industry because the disease survives well in cold temperatures and renders potatoes unmarketable.

The Pathogen

The primary symptom of *Ralstonia solanacearum* race 3 biovar 2 in geraniums is wilted or yellowed leaves. The disease is transmitted through soil, contaminated water, equipment, personnel, and by transplanting infected plants. It is not spread through the air, from plant to plant through the splashing of water, or when sound sanitation practices are followed.

There are five races of *Ralstonia solanacearum* with different hosts and geographic distributions. Race 1 has very wide host range and is endemic to the Southern United States. The main host of race 2 is bananas, and this race is found in the Caribbean, Brazil, and the Philippines. Race 3 is found worldwide except in the United States and Canada. Race 4 affects ginger in much of Asia, and race 5 affects mulberries in China.

APHIS Actions

APHIS officials determined that the infected geranium cuttings originated in Kenya and were unintentionally imported into the United States. On February 14, 2002, APHIS banned additional geranium shipments from Kenya until the situation can be resolved.

Currently, inspectors with APHIS' Plant Protection and Quarantine (PPQ) program, working cooperatively with States, are conducting investigations to determine the locations of any infected geraniums. Inspectors will put hold orders, which do not allow for the movement of product, on any potentially infected geraniums or host material. This material will be held in greenhouses for a specific time period at a prescribed temperature that will facilitate diagnosis of the disease. If *Ralstonia solanacearum* race 3 biovar 2 is confirmed in any of this material, all infected plants and those within at least one meter will be destroyed and the greenhouses disinfected. PPQ inspectors will determine on a case-by-case basis if additional plants that may have come in contact with infected plants must be destroyed. They will oversee the destruction of plants and the disinfection of facilities.

USDA's Agricultural Bioterrorism Act of 2002

Ralstonia solanacearum race 3 biovar 2 is on USDA's Agricultural Bioterrorism Act of 2002 Select Agents and Toxins list. These regulations were established in December 2002 to ensure that safeguards were in place for the possession, use, and transfer of select biological agents and toxins that could pose a threat to the public and animal and plant health. In determining whether an agent or toxin should be included on the USDA list, the following aspects were considered:

- The effect of an agent or toxin on animal or plant health or products.
- The virulence of an agent or degree of toxicity of the toxin and the methods by which the agents or toxins are transferred to animals or plants.
- The availability and effectiveness of medicines and vaccines to treat and prevent any illness caused by an agent or toxin.

APHIS officials determined that the introduction of *Ralstonia solanacearum* race 3 biovar 2 was unintentional.

Additional Information

For additional information on *Ralstonia solanacearum* race 3 biovar 2, please visit the PPQ Web site at <http://www.aphis.usda.gov/ppq>.

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